



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/721,141	11/22/2000	Neelamadhaba Mahapatro	418268800US1	7049
45979	7590	09/11/2007		
PERKINS COIE LLP/MSFT P. O. BOX 1247 SEATTLE, WA 98111-1247			EXAMINER MEINECKE DIAZ, SUSANNA M	
			ART UNIT 3694	PAPER NUMBER
			MAIL DATE 09/11/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/721,141

Applicant(s)

MAHAPATRO, NEELAMADHABA

Examiner

Susanna M. Diaz

Art Unit

3694

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2007 and 15 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 72-91 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 72-91 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This final Office action is responsive to Applicant's amendment filed February 22, 2007 and arguments filed February 22, 2007 and June 15, 2007.

Claims 50-71 have been cancelled.

Claims 72-91 have been added and are presented for examination.

### ***Response to Arguments***

2. Applicant's arguments filed February 22, 2007 and June 15, 2007 regarding the art rejection have been fully considered but they are not persuasive.

Applicant's arguments regarding Brown are moot at present due to the § 112, 2<sup>nd</sup> paragraph rejections that have been added in response to the claim amendments.

In Applicant's response filed February 22, 2007, Applicant requests clarification regarding the Official Notice statement (footnote on page 8). When resources are scheduled, the Examiner has submitted (by her Official Notice statement) that more scarce resources are often harder to schedule because they are more in demand and often have a tighter schedule (as compared to more abundant resources); therefore, the more scarce resources often control an overall schedule since the more abundant resources tend to have greater availability.

Regarding the previously pending rejection under § 112, 2<sup>nd</sup> paragraph, Applicant refers to the specification to define the term "component" as referring to "'conventional computer components, including a processing unit (PU), [and] memory storage devices for the PU.'" (Specification, 11:35-12:1.) As such, the term 'component' in these claims

clearly refers to a storage device that contains instructions for performing the processing specified in the claim language." (Page 2 of Applicant's arguments filed June 15, 2007) This definition has been accepted as a limiting definition of the components recited in claims 86-91, thereby rendering these claims definite.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 72-91 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 72 recites that the first assignment and second assignment are scheduled independently...so that the first assignment is scheduled to start at a time that is independent of a time at which the second assignment is scheduled to start. It is not clear what is meant by this limitation because claims 73 and 74 recite priorities for the tasks and corresponding assignments. The existence of scheduling priorities among tasks and assignments implies that the subdivided tasks are dependent on one another, and therefore not independent, as recited in claim 72. If there are scheduling priorities set among tasks that are subdivided into assignments, then some temporal order is associated with the tasks, thereby conflicting with the concept of scheduling the assignments independently of one another. Dependent claims 75-78 recite similar scheduling and dependency constraints in association with the tasks and assignments.

Such limitations also conflict with the notion of independently scheduling tasks and assignments, as set forth in independent claim 75.

Independent claim 79 recites that the first assignment and second assignment are scheduled "individually...so that the component assignments can be scheduled to start at different times." Similar issues arise as those found in claim 72 with the "independently" language. For example, "individually" scheduling the first and second assignments implies that these assignments are scheduled independently of one another, yet claims 80-85 recite limitations that assert dependencies among the tasks and assignments (as seen in dependent claims 75-78). Additionally, claim 79 recites that the component assignments "can be scheduled to start at different times." Are these assignments actively scheduled at different start times or only capable of being scheduled at different start times? If the claim is intentionally written such that scheduling the two assignments to start at different times is only a capability and not actively required within the metes and bounds of the invention, then the scope of "individually" scheduling them is placed into question.

Claim 86 recites similar "independently" language as seen in claim 72. Parallel limitations are also recited in dependent claims 87-91 (when compared to the limitations of claims 75-78). Therefore, the same rejections applied to claims 72-78 apply to claims 86-91 as well.

Appropriate correction is required.

*In light of the § 112, 2<sup>nd</sup> paragraph rejections raised above, the Examiner maintains the existing art rejection since Brown still reasonably applies to the core of the claimed invention (i.e., the best understanding of the claimed invention in light of the "independently" and "individually" language). The art rejection will be reevaluated when the scope of the claims is clarified.*

**Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 72-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (U.S. Patent No. 5,671,361).

Brown discloses a computer-implemented method for generating a schedule for a project, the method comprising:

[Claim 72] receiving resource information describing resources available to tasks of the project and resource constraints, a first resource having a first resource constraint and a second resource having a second resource constraint, the first and second resources being different (col. 3, lines 15-29, 56-64; col. 4, lines 6-44; col. 6, line 17 through col. 7, line 50, including Tables 1-3 – Brown's activities are equivalent to the claimed tasks. Brown's resources are equivalent to the claimed resources. The

maximum number of resources available, as seen in col. 4, lines 5-44, is a constraint associated with each type of resource);

receiving task information identifying tasks of the project and task constraints, a task specifying one or more resources that are to be used to complete the task, at least one designated task having a designated task constraint and specifying at least the first resource and the second resource (col. 6, line 17 through col. 7, line 50, including Tables 1-3 – Brown's listing of resource types with the number of units needed to complete each activity is equivalent to the claimed assignments. Examiner's interpretation is supported by Table 2 in Applicant's specification and its comparison to the type of information shown in Table 1 of Brown. The tasks are constrained by the availability of resources as well as precedence relationships among the tasks, as seen in col. 4, lines 5-44, col. 5, lines 39-40, and col. 10, lines 38-44); and

automatically dividing the designated task into a first assignment completable by only the first resource and having a first assignment constraint based on the designated task constraint, and a second assignment completable by only the second resource and having a second assignment constraint based on the designated task constraint (Table 1 – With each activity, an assignment contributing to the activity is made to resource type 1, resource type 2, and resource type 3. Col. 6, lines 54-57 show an example where a first assignment for activity F6 could be made to resource type 1, which is 1 truck. F6 corresponds to a second assignment that is completable by resource type 2, which is 1 worker. In other words, a first assignment of resource type 1 is only assigned to and may be completed by trucks. A second assignment of resource type 2 is only

assigned to and may be completed by workers. Resource type 3, i.e., money, can be presented as an alternate to a first assignment, second assignment, or may serve as a third assignment);

scheduling the first assignment based at least on the first assignment constraint and the first resource constraint (col. 6, line 17 through col. 7, line 50, including Tables 1-3 – Brown's listing of resource types with the number of units needed to complete each activity is equivalent to the claimed assignments. Examiner's interpretation is supported by Table 2 in Applicant's specification and its comparison to the type of information shown in Table 1 of Brown. The tasks are constrained by the availability of resources as well as precedence relationships among the tasks, as seen in col. 4, lines 5-44, col. 5, lines 39-40, and col. 10, lines 38-44); and

scheduling the second assignment based at least on the second assignment constraint and the second resource constraint (col. 6, line 17 through col. 7, line 50, including Tables 1-3 – Brown's listing of resource types with the number of units needed to complete each activity is equivalent to the claimed assignments. Examiner's interpretation is supported by Table 2 in Applicant's specification and its comparison to the type of information shown in Table 1 of Brown. The tasks are constrained by the availability of resources as well as precedence relationships among the tasks, as seen in col. 4, lines 5-44, col. 5, lines 39-40, and col. 10, lines 38-44. The availability of the different resource types, or assignments, controls which activities may be performed. A precedence is attributed to all tasks and, therefore, the corresponding resource assignments associated with each task);



[Claim 73] receiving priorities for the tasks (col. 3, lines 15-29, 56-64; col. 4, lines 24-48); and

scheduling the assignments of a high priority task before scheduling the assignments of a low priority task (col. 3, lines 15-29, 56-64; col. 4, lines 24-48; Tables 1-3 – Brown's listing of resource types with the number of units needed to complete each activity is equivalent to the claimed assignments. Examiner's interpretation is supported by Table 2 in Applicant's specification and its comparison to the type of information shown in Table 1 of Brown. The tasks are constrained by the availability of resources as well as precedence relationships among the tasks, as seen in col. 4, lines 5-44, col. 5, lines 39-40, and col. 10, lines 38-44. The availability of the different resource types, or assignments, controls which activities may be performed. A precedence is attributed to all tasks and, therefore, the corresponding resource assignments associated with each task);

[Claim 74] receiving priorities for the tasks (col. 3, lines 15-29, 56-64; col. 4, lines 24-48);

setting priorities of assignments based on the priority of their tasks (col. 3, lines 15-29, 56-64; col. 4, lines 24-48; Tables 1-3 – Brown's listing of resource types with the number of units needed to complete each activity is equivalent to the claimed assignments. Examiner's interpretation is supported by Table 2 in Applicant's specification and its comparison to the type of information shown in Table 1 of Brown. The tasks are constrained by the availability of resources as well as precedence relationships among the tasks, as seen in col. 4, lines 5-44, col. 5, lines 39-40, and col.

Art Unit: 3694

10, lines 38-44. The availability of the different resource types, or assignments, controls which activities may be performed. A precedence is attributed to all tasks and, therefore, the corresponding resource assignments associated with each task); and

adjusting the priority of assignments based on availability of the resources of the assignments (col. 3, lines 15-29, 56-64; col. 4, lines 24-48; Tables 1-3 – Brown's listing of resource types with the number of units needed to complete each activity is equivalent to the claimed assignments. Examiner's interpretation is supported by Table 2 in Applicant's specification and its comparison to the type of information shown in Table 1 of Brown. The tasks are constrained by the availability of resources as well as precedence relationships among the tasks, as seen in col. 4, lines 5-44, col. 5, lines 39-40, and col. 10, lines 38-44. The availability of the different resource types, or assignments, controls which activities may be performed. A precedence is attributed to all tasks and, therefore, the corresponding resource assignments associated with each task); and

scheduling the assignments in adjusted priority order (col. 3, lines 15-29, 56-64; col. 4, lines 24-48; Tables 1-3 – Brown's listing of resource types with the number of units needed to complete each activity is equivalent to the claimed assignments. Examiner's interpretation is supported by Table 2 in Applicant's specification and its comparison to the type of information shown in Table 1 of Brown. The tasks are constrained by the availability of resources as well as precedence relationships among the tasks, as seen in col. 4, lines 5-44, col. 5, lines 39-40, and col. 10, lines 38-44. The availability of the different resource types, or assignments, controls which activities may

be performed. A precedence is attributed to all tasks and, therefore, the corresponding resource assignments associated with each task);

[Claim 75] receiving a specification of dependencies between tasks (Fig. 3; col. 3, lines 27-29, 55-67; col. 6, lines 17-33; col. 10, lines 40-44);

scheduling the assignments of independent tasks before the assignments of dependent tasks (Fig. 3; col. 3, lines 27-29, 55-67; col. 6, lines 17-33; col. 10, lines 40-44);

[Claim 76] receiving a specification of dependencies between tasks (Fig. 3; col. 3, lines 27-29; col. 6, lines 17-33; col. 10, lines 40-44); and

scheduling the assignments of tasks in dependency order of the tasks (Fig. 3; col. 3, lines 27-29; col. 6, lines 17-33; col. 10, lines 40-44; Tables 1-3 – Brown's listing of resource types with the number of units needed to complete each activity is equivalent to the claimed assignments. Examiner's interpretation is supported by Table 2 in Applicant's specification and its comparison to the type of information shown in Table 1 of Brown. The tasks are constrained by the availability of resources as well as precedence relationships among the tasks, as seen in col. 4, lines 5-44, col. 5, lines 39-40, and col. 10, lines 38-44. The availability of the different resource types, or assignments, controls which activities may be performed. A precedence is attributed to all tasks and, therefore, the corresponding resource assignments associated with each task);

[Claim 77] receiving a time constraint of a task (Fig. 3; col. 3, lines 27-29, 56-64; col. 6, lines 17-65; col. 10, lines 40-44); and

scheduling the assignments of tasks so that the time constraint of the task is satisfied (Fig. 3; col. 3, lines 27-29, 56-64; col. 6, lines 17-65; col. 10, lines 40-44; Tables 1-3 – Brown's listing of resource types with the number of units needed to complete each activity is equivalent to the claimed assignments. Examiner's interpretation is supported by Table 2 in Applicant's specification and its comparison to the type of information shown in Table 1 of Brown. The tasks are constrained by the availability of resources as well as precedence relationships among the tasks, as seen in col. 4, lines 5-44, col. 5, lines 39-40, and col. 10, lines 38-44. The availability of the different resource types, or assignments, controls which activities may be performed. A precedence is attributed to all tasks and, therefore, the corresponding resource assignments associated with each task);

[Claim 78] wherein the scheduling of the assignments of tasks schedules assignments to satisfy start-on constraints before satisfying must-finish-by constraints (Fig. 3; col. 3, lines 27-29, 56-64; col. 6, lines 17-65; col. 10, lines 40-44; Tables 1-3 – Brown's listing of resource types with the number of units needed to complete each activity is equivalent to the claimed assignments. Examiner's interpretation is supported by Table 2 in Applicant's specification and its comparison to the type of information shown in Table 1 of Brown. The tasks are constrained by the availability of resources as well as precedence relationships among the tasks, as seen in col. 4, lines 5-44, col. 5, lines 39-40, and col. 10, lines 38-44. The availability of the different resource types, or assignments, controls which activities may be performed. A precedence is attributed

to all tasks and, therefore, the corresponding resource assignments associated with each task).

Regarding claim 1, Brown does not expressly teach that the scheduling of the second assignment is performed after scheduling of the first assignment. However, Brown does mention that resource demand is normalized across various resources in order to give an idea of which activities require harder-to-schedule resources (cols. 9-10). Official Notice is taken that it is old and well-known in the art of resource assignment to schedule harder-to-schedule or more scarce resources for an activity prior to scheduling easier-to-schedule or more abundant resources for that same activity. This practice facilitates more efficient scheduling by giving preference to resources with tighter constraints, thereby preventing unnecessarily running through scenarios that first give preference to easier-to-schedule resources only to realize that the harder-to-schedule resources are not available. Since Brown already suggests giving preference to harder-to-schedule activities (which correspond to multiple resources), the Examiner submits that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify Brown such that the scheduling of the second assignment is performed after scheduling of the first assignment in order to facilitate more efficient scheduling by giving preference to resources with tighter constraints, thereby preventing unnecessarily running through scenarios that first give preference to easier-to-schedule resources only to realize that the harder-to-schedule resources are not available.

[Claims 79-85] Claims 79-85 recite limitations already addressed by the rejection of claims 72-78 above; therefore, the same rejection applies. Brown's invention is a computerized system and therefore incorporates software to perform the recited functionality.

[Claims 86-91] Claims 86-91 recite limitations already addressed by the rejection of claims 72-78 above; therefore, the same rejection applies. Brown's invention is a computerized system and therefore incorporates hardware and software to perform the recited functionality.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

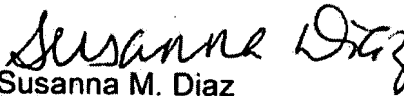
Art Unit: 3694

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susanna M. Diaz whose telephone number is (571) 272-6733. The examiner can normally be reached on Monday-Friday, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell can be reached on (571) 272-6712. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Susanna M. Diaz  
Primary Examiner  
Art Unit 3694

September 4, 2007